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# A Primer on the Canadian Pacific Cruise Ship Industry

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## Executive Summary

The cruise ship industry along the Canadian Pacific coast has been increasing in size and complexity over the past decade with revenue passengers now exceeding 1 million. The industry is based primarily on the Alaskan cruise market that began in the 1950s and became increasingly popular during the 1980s. Vancouver has always been a player in the Alaskan cruise ship industry due to the US Passenger Services Act that regulates passenger and vessel transportation in US waters.

The 1886 Passenger Services Act stipulates that ships cannot transport passengers between two US ports unless the ship is owned by US citizens, built in US shipyards, and crewed by US citizens. The argument in support of the 1886 Passenger Services Act remains relevant and compelling today as it represents a business protection measure that can also be claimed to ensure safety, environmental protection, efficiency, and national security in the maritime industry.[4]

The following report was prepared as a primer on the scale and the scope of the cruise ship industry on the Canadian Pacific coast. The focus on the cruise ship industry stems from the recognition of the importance of the sector and its potential for growth. In Vancouver, estimates value the total economic contribution to the city of each ship at 1.5 million dollars for every port call. In smaller coastal communities, the cruise ship industry also has the potential of producing economic and/or diversification strategies.

Important to the economic analysis is the ability to balance other environmental and social factors to create positive outcomes. The environmental and social factors are complicated by the nature of the coastal zone and the wide variety of legislative bodies, stakeholders, and interests group involved with varying degrees of influence. The current international and Canadian legislation adequately regulates the cruise industry however questions of effective monitoring and enforcement remain. In addition the seemingly proactive attitudes and actions of the cruise associations towards waste discharging indicate a degree of environmental concern. The social impacts require further study to determine where improvements could be implemented. However, with continued cooperation and open dialogue between government, industry, interest groups, and local communities many of the issues concerning the cruise ship industry can be addressed.

[4] Thompson, Stephen J. 1999. "The Passenger Services Act, Domestic Ocean Passenger Services, and the 106th Congress" The National Council for Science and the Environment: Washington.

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**Abbreviations**

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|---|---|
| AMCV | American Classic Voyages Co. |
| CLIA | Cruise Lines International Association |
| GAO | General Accounting Office |
| GDP | Gross Domestic Product |
| GVRD | Greater Vancouver Regional District |
| ICCL | International Council of Cruise Lines |
| IMO | International Maritime Organization |
| ISM | International Management Code for the Safe Operation of Ships and for Pollution Prevention |
| LIT | Litton Industries' Ingalls Shipbuilding |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| MNC | Multi-National Corporation |
| NGO | Non-Governmental Organization |
| NWCA | North West CruiseShip Association |
| PSC | Port State Control |
| SCTW | Standards for Training Certification and Watchkeeping |
| SMS | Safety Management Systems |
| SOLAS | Safety of Life at Sea Convention |
| TNC | Trans-National Corporation |
| VPA | Vancouver Port Authority |
| WTO | World Tourism Organization |

## 1.0 Introduction

The world cruise ship industry is a lucrative and controversial activity that operates along nations' coasts and within international waters. According to a 2001 World Tourism Organization (WTO) report the number of global cruise passengers over the past decade has increased at almost twice the pace as that of overall world international tourist arrivals. In 1998, there were 223 cruise ships operating around the globe[5] - one half of these sailed in North America and the Caribbean. Since 1990, the number of cruise passengers increased by 7.7 percent, reaching 9.5 million in 1999. Cruise ship passengers currently represent 1.3 percent of international arrivals and are producing increasing amounts of revenues in all locations.[6]

Over the past two decades the cruise ship industry on Canada's Pacific (Canadian Pacific) coast has been increasing significantly with respect to the number of vessels and passengers, revenues, influence, and environmental and socio-economic considerations. More than 600,000 people will visit Alaska aboard cruise ships in 2001 almost all of whom will travel through British Columbia's Strait of Georgia. At present, some 26 ships (22 belonging to major cruise lines) regularly visit the Canadian Pacific coast. The economic benefit for Canada's largest cruise ship destination in Vancouver has been approximated at 1.5 million dollars per every port call. It has therefore become essential in this new millennium to understand the scale and the scope of the Canadian Pacific cruise ship industry and its impacts on our coasts. This report will examine the economic, environmental, and socio-cultural impacts of the Canadian Pacific cruise ship industry in order to identify the existing challenges and highlight areas for future study

### 1.1 Global Cruise Ship Industry

The international nature and dynamics of the cruise industry is arguably unparalleled in any other industrial sector. Cruise companies travel through both domestic and international waters bearing international flag state status, crews and guests. The growth of the global cruise industry has demonstrated an enormous momentum with the WTO estimating that North American and European demand will surpass 12 million passengers by the end of 2010. The US-based Cruise Lines International Association (CLIA) predicts that over the next five years the market for the cruise industry in North America could be worth more than US$50 billion. The European market has been experiencing a faster growth in demand than the North America market by successfully decreasing the age of passengers from seniors to younger couples and increasing the demand for shorter cruises[7]. It was only in the last decade that the Mediterranean and the Asia/South Pacific/Australia cruise ship industry surpassed the Alaskan/Canadian industry in terms

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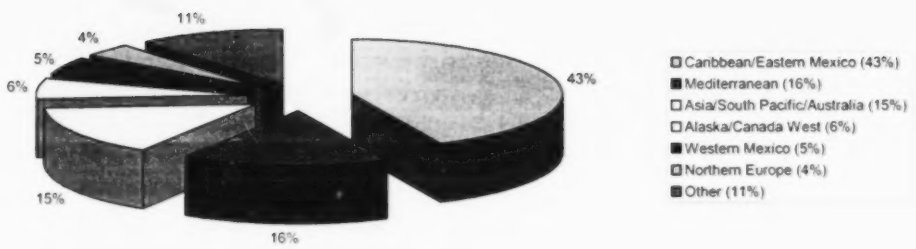
[5] United States General Accounting Office. 2000. Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain" GAO/RCED-00-48

[6] WTO. 2001: http://www.world-tourism.org/newsroom/Bulletin/more_bulletin /B0105010.html

[7] WTO. 2001: http://www.world-tourism.org/newsroom/Bulletin/more_bulletin /B0105010.html

of the percentage of world market destinations (Figure 1). Caribbean destinations boast the largest percentage of the world market at 43%.[8]

**Figure 1**




Source: Cruise Industry News 1999 Annual

Shipbuilding for the international cruise industry has traditionally taken place in one of four shipyards in Europe: Chantiers Atlantique, France; Fincantieri, Italy; Kvaerner Masa, Finland; and Meyer Werft; Germany.[9] The US and Japan have been attempting to infiltrate this market as each plan on launching two ships by 2004. In the US, congressional leaders and administration officials joined American Classic Voyages Co. (AMCV) and Litton Industries' Ingalls Shipbuilding (LIT) division to announce the signing of the Project America contract to build the largest US flagged cruise ships ever built.

Under the terms of the Project America contract, which has a potential value of $1.4 billion for up to three ships, Ingalls will initially build two 1,900-passenger, U.S.-flagged cruise vessels for AMCV, with an option for a third vessel.[10] The base price for the first two vessels, which does not include incentive payments available to Ingalls, is $880 million.

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[8] Cruise Industry News 1999 Annual

[9] New Cruise Ships on Order for 2001-2004, http:www.greatcruising.com/newships/newships.html.

[10] Plans Set For The Largest U.S. Cruise Ships Ever Built
American Classic Voyages Co. And Litton's Ingalls Shipbuilding Announce Signing Of Historic Contract
http://www.amcv.com/pr/papr.html

## 1.2 Canadian Cruise Ship Industry

In 1998, international cruise ship passenger totals were increasing at all of Canada's major ports with the exception of Charlottetown, PEI. Vancouver recorded the highest number of cruise ship passenger arrivals with over 1 million revenue passengers.[11] Victoria and Prince Rupert also received an increasing amount of arrivals, recording 108,176 and 2,169 passengers respectively.

In eastern Canada, luxury cruise ships regularly travel along the eastern seaboard and up the St. Lawrence River to Québec City and Montreal. They also sail out of New York, northward to Halifax, Saint John and other Atlantic ports. Many of these cruises have traditionally been scheduled for the fall colour season, but summer visits are becoming increasingly popular as well. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City, and Kingston or Rochester, as well as along the Erie Canal and Hudson River to Warren, New York. Greater numbers of cruise vessels passengers were visiting Halifax, NS, and Saint John, NB, in 1998 while other Atlantic ports also welcomed international cruise passengers. For example, Cape Breton, NS, had a successful cruise season compared to previous years, with an estimated 25,000 passengers coming ashore at Sydney, Baddeck, and Louisbourg. Corner Brook, NFLD, also welcomed 7,500 passengers in 1998, an increase of over 4,000 from 1997.[12]

Charlottetown, PEI, was striving to increase vessel calls in 1999 after much confusion concerning the rules for vessels transiting under the Confederation Bridge. To mitigate the possibility of a ship striking Confederation bridge, the bridge contract specified the inclusion of Navigation Islands that would surround the most vulnerable piers in centre strait. Navigation Islands would ensure that run-away barges or ships would hit the Island, not the bridge. Strait Crossing Inc. (SCI), the bridge builder, unilaterally decided to forgo construction of Navigation Islands. Instead, the SCI filled the hollow piers with concrete (an approach that offers far less protection). So serious was this design change, the Coast Guard would not grant its legal approval of the project, thereby requiring ships to hire a pilot to guide vessels under the bridge.[13] Many cruise ships are threatening to abandon Charlottetown as a destination for safety reasons and additional cost concerns. Charlottetown recorded visits by only 2,000 passengers in 1998, well below the levels of earlier years and dramatically down from a peak of 18,000 passengers in 1991.[14]

In recent years, the number of cruise ships visiting some Canadian Arctic communities has increased. According to Phil Burak, the representative for Nunavut

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[11] Transportation Canada (1998). Transportation in Canada - 1998 Annual Report: http://www.tc.gc.ca/pol/en/anre1998/TC9815EE.HTML

[12] Transportation Canada (1998). Transportation in Canada - 1998 Annual Report: http://www.tc.gc.ca/pol/en/anre1998/TC9815EE.HTML

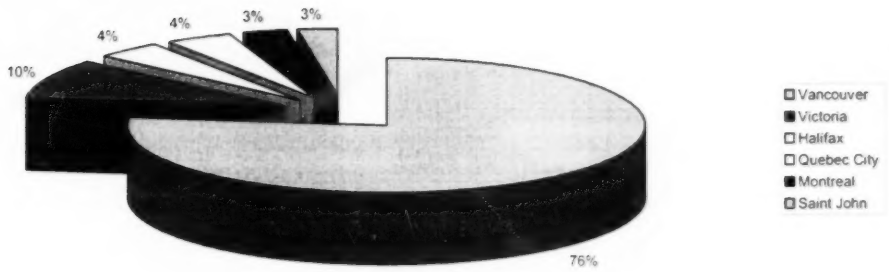
[13] Press Archive: CEDF Seeks Investigation of Confederation Bridge: Auditor General Asked to Intervene. June 6, 1997, http://www.cedf.net/news/19970606.html

[14] Transportation Canada (1998). Transportation in Canada - 1998 Annual Report: http://www.tc.gc.ca/pol/en/anre1998/TC9815EE.HTML

Tourism, seasonal visits to Cambridge Bay in the central Arctic are limited to one and sometimes two ships per year in the central Arctic, about mid-point along the Northwest Passage.[15] There are many uncertainties confronting the Arctic cruise industry, in particular the constant changes in ice condition, which have the potential to alter the port calls. The uncertainty causes problems for Arctic communities as they may prepare for a cruise ship that will never arrive or for other destinations where cruise ships arrive without notice. On the other hand, the disembarking passengers may spend thousands of dollars on art and cultural activities during an afternoon, which can be a great boost to the local economies. Currently, Quark Expedition, Marine Expeditions, and Radisson Seven Seas Cruises are the only companies offering cruises to the Arctic.

**Figure 2**

**Cruise Ship Passenger Arrivals at Major Canadian Port Cities (% of total passenger)**




Source: Local Port Corporations
Transport Canada, 1998: http://www.tc.gc.ca/pol/en/anre1998/TC9815EE.HTML.
* Victoria data was added in later from the 2001 cruise ship schedule published by NWCA.

### 1.3 Canadian Pacific Coast Cruise Ship Industry

Port Vancouver, as the largest Canadian cruise ship destination, receives 85 percent of cruise passenger arrivals into Canada and 90 percent of those into British Columbia. The volume of cruise passengers in Vancouver has increased over the last few decades and amounted to a total of 1,053,989 revenue passengers in 2000[16]. Revenue passengers in

[15] Laird, John. 2000. Hot Speculation, Cool Realities. Nunavut Now: Nunatsiaq News.
[16] Cruise Ship Passengers YTD, June 2001, Port Vancouver.
http://www.portvancouver.com/frames/index.htm

2001 are estimated to again exceed 1 million. The tentative schedule for the 2001 cruise ship season, published by Port Vancouver, indicates that Vancouver will witness 334 sailings by 26 different ships (Table 1). The major cruise industry operators are Carnival/ Holland America Lines, Princess Cruise Lines, Royal Caribbean International/Celebrity Cruise Lines, and Norwegian Cruise Lines. Figure 3 maps out the existing cruise routes and the route distribution between Vancouver and Alaska.

According to the 1999 Passenger Survey, prepared by InterVista Consulting Inc., the average cruise ship passengers coming into the Canadian Pacific coast were older (with 69% being over 55), retired, affluent, residents of the United States traveling in parties of two. The Passenger Survey also indicates that more women undertake cruises on the Canadian Pacific Coast than men.

Small cruise ships, usually called 'pocket cruises', are also navigating the Canadian Pacific coast. The term 'pocket cruises' has also been used to refer to short distance trips such as those operating between Seattle, Vancouver, and Victoria. For the purposes of this paper, the term 'pocket cruises' will be used to define vessels typically carrying between 50 and 120 passengers. Most 'pocket cruises' are home-ported in Alaska rather than in Canada or Seattle.[17] Currently pocket cruises are frequenting the ports in Victoria and Prince Rupert. Many other small communities, including Campbell River and Port Hardy, are also looking to attract the smaller and subsequently the larger cruise ships to their areas. The District of Campbell River Indian Band, sponsored by Human Resources Development Canada, underwent a cruise ship port preliminary assessment in 1999 to determine the potential impacts and opportunities that exist in the cruise market and decided to attempt to re-enter into the industry. Campbell River witnessed a pocket cruise ship arrival into its port during September 2001.

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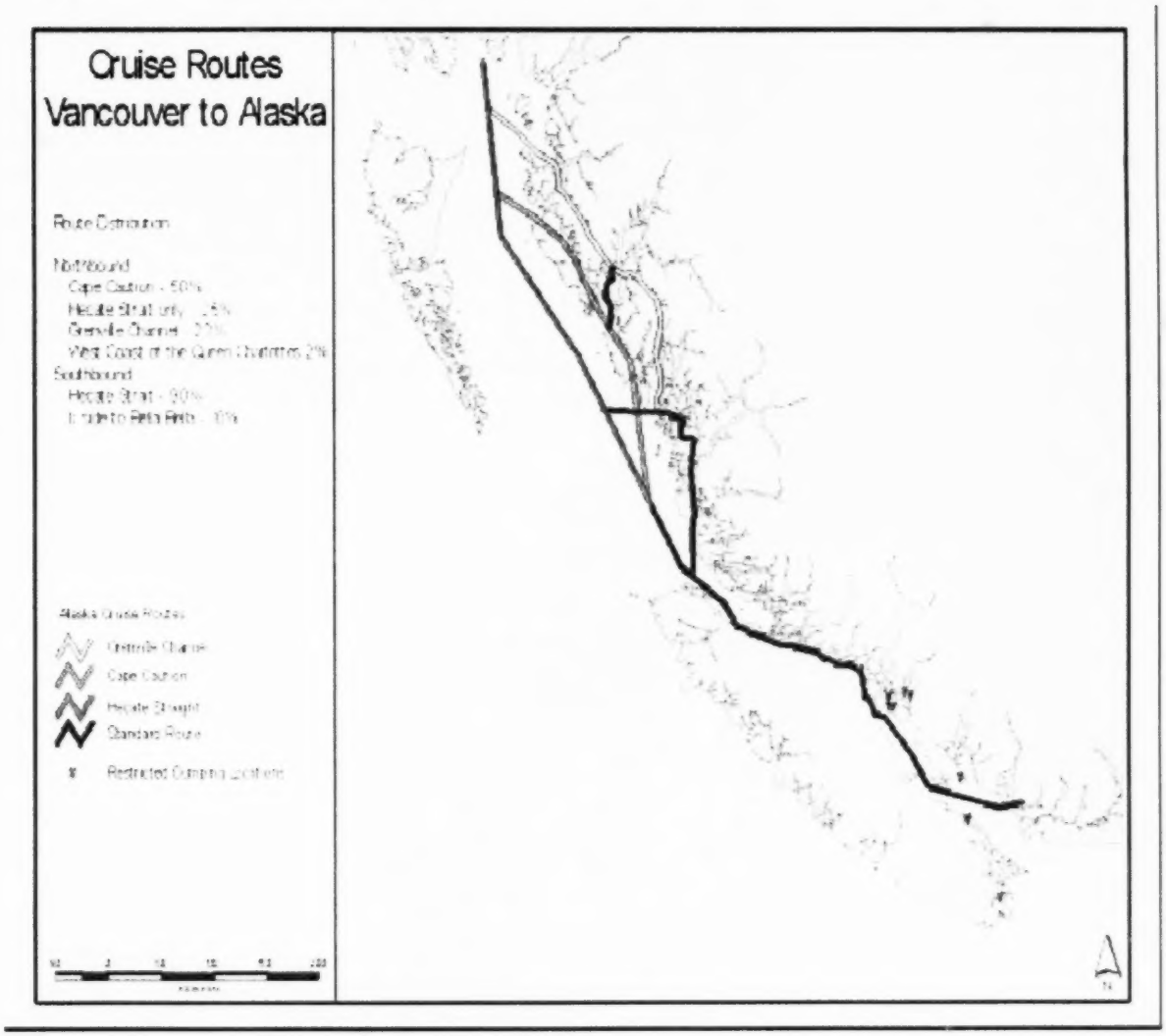
[17] Campbell River Port Preliminary Assessment. 1999. Seattle: Klugherz & Associates/Peratrovich, Nottingham and Drage, Inc.

**Figure 3:** Cruise Routes Vancouver to Alaska




Map created by Ryan Greville, Canadian Coast Guard

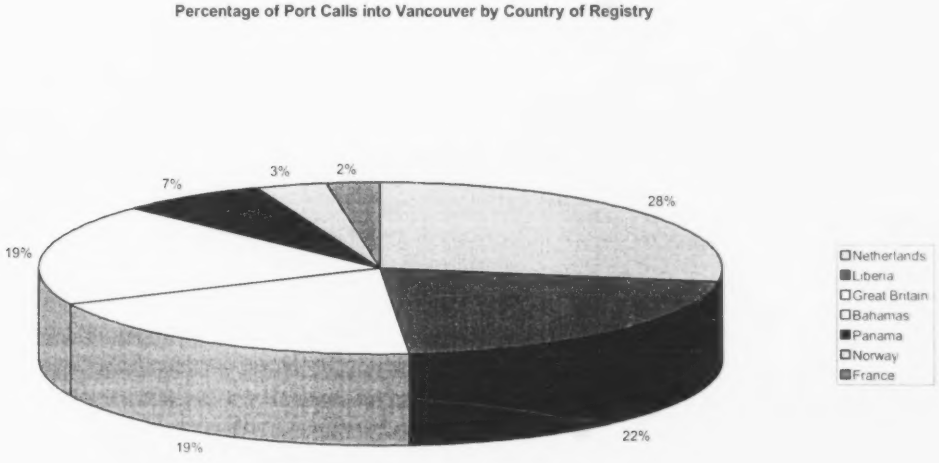
### 1.3.1 1886 US Passenger Services Act

The cruise ship industry in British Columbia is based primarily on the Alaskan cruise market which began in the 1950s and became increasingly popular during the 1980s. Vancouver has always been a player in the Alaskan cruise ship industry due to the US Passenger Services Act that regulates passengers and vessel transportation to and from US waters.

The 1886 Passenger Services Act stipulates that ships cannot transport passengers between two US ports unless the ship is owned by US citizens, built in US shipyards, and crewed by US citizens. Similarly, the US Jones Act restricts cargo vessel transportation between two US ports under the same conditions. The arguments in support of the 1886 Passenger Services Act and Jones Act remain relevant and compelling today as they represent a business protection measure that can also be claimed to ensure safety, environmental protection, efficiency, and national security in the maritime industry.[18]

Currently, the majority of cruise ships in operation worldwide are crewed by international crews and sailed under various foreign flags with Panama or Liberia being the most popular flagging nations. Some 40 percent of all passenger cruise vessels operate under Panamanian and Liberian flags.[19] The cruise vessels entering Canada are flagged by states from all around the world with the Netherlands and Liberia being the most popular (Figure 4). The last Canadian-registered and crewed cruise ship to serve the Alaskan cruise market was in the early 1980s.

**Figure 4**




Source: Cross referenced material from Cruise Ship Schedule (Port Vancouver) to Cruise Ship's Facts Sheets (http://www.cruisecritic.com/reviews).

As a result of the US Passenger Services Act, Vancouver has secured its status as a strategic location for the Alaskan cruise ship industry. The Port of Vancouver is the homeport for 18 vessels operating in the Alaskan industry and is the main port of call for ships traveling from the United States to Alaska.

[18] Thompson, Stephen J. 1999. "The Passenger Services Act, Domestic Ocean Passenger Services, and the 106th Congress" The National Council for Science and the Environment: Washington.
[19] United States Environmental Protection Agency. 2000. "Cruise Ship White Paper" USEPA: Washington.

The United States is currently re-examining the Passenger Services Act and its implications for cruise lines. The ports of Seattle and Hawaii have questioned the 115-year old law which they believe hampers their abilities to become competitive in the international cruise market. Regardless of the re-examination, it appears that the Act will remain due to its underlying goal of protecting US business, safety, and security in the maritime and shipping industry.[20] The first new US built, crewed, and operated vessel that adheres to the stipulations in the Passenger Servicess Act will be launched in 2003 and will cater to and from the Hawaiian cruise market. Currently there is no discussion about placing new US built ships in the Vancouver/Alaska market.

### 1.3.2 Cruise Ship Passengers and Revenue Passengers

An analysis of the cruise passenger statistics requires that revenue passengers be distinguished from actual individual cruise passengers. The revenue passenger totals include embarked/disembarked passengers which involves a double counting of individual round-trip passengers. Round-trip passengers are counted once, as they embark the ship, and again as they disembark the ship. Individual in-transit passengers are also counted twice, once disembarking and again as they return to ship to embark at the end of the day. In contrast individual one-way cruise passengers are only counted once when they either embark or disembark at the Port of Vancouver.

Using the revenue passenger statistics for Vancouver (estimated at over 1 million for 2001) for economic analyses makes sense as passengers arriving at two distinct times contribute to the surrounding economy at each visit. Using the revenue passenger total for environmental analyses, however, would produce exaggerated estimates of passenger impact. Crew members, who can amount to as much as one half of the individual ship passenger totals, are absent from the revenue passenger counts. Crew members represent another segment of the cruise ship industry as they also contribute to local port economies and produce on-board waste. In the 2001 cruise ship season Vancouver is estimated to welcome in 763,082 actual passengers and crew as compared to 1,068,000 revenue passengers.

[20] Maritime Cabotage Task Force, The Jones Act: Fact and Fiction. http://www.mcft.com/jonesact.htm

**Table 1: Cruise Ship Port Calls into Port Vancouver and Passenger and Crew Totals for the 2001 Vancouver Cruise Season**

| Cruise Line | Vessel | Port Calls | Passenger Cap. | Crew Cap. | Total Pass. | Total P&C |
|---|---|---|---|---|---|---|
| Carnival Cruise Lines | Carnival Spirit | 11 | 2,124 | 1,029 | 23,364 | 34,683 |
| Carnival Cruise Lines | Jubilee | - | 1,486 | 670 | - | - |
| Celebrity Cruises | Infinity | 20 | 1,950 | 999 | 39,000 | 58,980 |
| Celebrity Cruises | Mercury | 12 | 1,870 | 909 | 22,440 | 33,348 |
| Cruise West | Spirit of Oceanus | 6 | 114 | 65 | 684 | 1,074 |
| Crystal Cruises | Crystal Harmony | 8 | 960 | 545 | 7,680 | 12,040 |
| Hapag Lloyd | Bremen | 4 | 164 | 94 | 656 | 1,032 |
| Holland America Line | Ryndam | 12 | 1,266 | 557 | 15,192 | 21,876 |
| Holland America Line | Statendam | 13 | 1,266 | 557 | 16,458 | 23,699 |
| Holland America Line | Veendam | 11 | 1,266 | 561 | 13,926 | 20,097 |
| Holland America Line | Volendam | 22 | 1,440 | 561 | 31,680 | 44,022 |
| Holland America Line | Westerdam | 22 | 1,494 | 612 | 32,868 | 46,332 |
| Holland America Line | Zaandam | 22 | 1,440 | 561 | 31,680 | 44,022 |
| NYK Cruises | Asuka | 1 | 600 | 262 | 600 | 862 |
| Mitsui OSK Passenger Line | Nippon Maru | 2 | 408 | 160 | 816 | 1,136 |
| Norwegian Cruise Line | Norwegian Sky | 1 | 2,002 | 750 | 2,002 | 2,752 |
| Norwegian Cruise Line | Norwegian Wind | 22 | 1,732 | 614 | 38,104 | 51,612 |
| Princess Cruise Line | Dawn Princess | 11 | 1,950 | 900 | 21,450 | 31,350 |
| Princess Cruise Line | Ocean Princess | 10 | 1,950 | 900 | 19,500 | 28,500 |
| Princess Cruise Line | Regal Princess | 22 | 1,590 | 696 | 34,980 | 50,292 |
| Princess Cruise Line | Sea Princess | 11 | 1,950 | 900 | 21,450 | 31,350 |
| Princess Cruise Line | Sun Princess | 10 | 1,950 | 900 | 19,500 | 28,500 |
| Radisson Seven Seas Cruises | Seven Seas Mariner | 8 | 700 | 445 | 5,600 | 9,160 |
| Royal Caribbean International | Rhapsody of the Seas | 11 | 2,000 | 765 | 22,000 | 30,415 |
| Royal Caribbean International | Radiance of the Seas | 32 | 2,100 | 859 | 67,200 | 94,688 |
| Royal Caribbean International | Vision of the Seas | 18 | 2,000 | 660 | 36,000 | 47,880 |
| World Explorer | Universe Explorer | 12 | 750 | 365 | 9,000 | 13,380 |
| **Total** | | **334** | **38,522** | **16,896** | **533,830** | **763,082** |

Source: Cross-referenced material from Cruise Ship Schedule (Port Vancouver) to Cruise Ship's Facts Sheets (http://www.cruisecritic.com/reviews).

## 2.0 Economic Impact

### 2.1 Tourism in British Columbia

Before assessing the magnitude of the economic impact of the cruise industry on the Canadian Pacific coast, it is important to analyze the impacts of tourism and the ports in the area. The approach to calculating tourism impact is to consider the revenues of tourism-related sectors and allocate a portion of revenues to actual tourism. Using this approach, the Ministry of Small Business, Tourism & Culture, Government of British Columbia, estimated that in 1999, 22.3 million visitors came to British Columbia generating 9.2 billion dollars in tourist activity. At first glance, this appears to represent a large driving force in BC's economic growth, however tourism's share of BC's Gross Domestic Product (GDP) was only 4.8 % of total GDP in 2000.

**Table 2: Distribution of Total GDP in British Columbia in 2000**

| Year | Total GDP | Goods | | Non-Tourism Services | | Tourism | |
|---|---|---|---|---|---|---|---|
| | $Millions | $M | % of total | $M | % of total | $M | % of total |
| **2000*** | 95,186 | 24,178 | 25.4 | 66,479 | 69.8 | 4,529 | 4.8 |

Source: Schrier, BC Stats, Tourism Industry Monitor, Annual 1999, Ministry of Finance and Corporate Relations, Government of British Columbia
*preliminary

It is perhaps more telling to examine tourism and port impacts on the Canadian Pacific coast using the numbers from Vancouver as it represents the largest point of contact for both tourists and cruise ship passengers. In Greater Vancouver in 2000, Tourism Vancouver estimated that visitors spent close to 3.5 billion dollars in the region. It was also estimated by Tourism Vancouver that the Alaskan cruise passengers who arrived in Vancouver during the 2000 cruise season spent approximately $124 million and generated $420 million (Table 3)[21]. Cruise ship passengers therefore represented approximately 2.5% of the tourists entering Vancouver in 2000 and spent 3.5% of the total dollars spent by tourists.

[21] The Greater Vancouver Convention and Visitors Bureau. 2000.
http://www.tourismvancouver.com/docs/help/research/research_economic_impact.html

**Table 3: Tourist Economic Impacts in Vancouver, 2000**

| | Tourists | Cruise ship Passengers | Cruise Ship Passengers (% )of total |
|---|---|---|---|
| Industry Output<br>The sum total of all economic activity that took place as a result of passenger spending, including spin-off activity as those dollars move through the economy | $7,400,000,000 | $279, 452, 579 | 3.7% |
| Wages and Salaries<br>The amount of wages and salaries generated by initial cruise passenger spending | $2,600,000,000 | $81,343,929 | 3.1% |
| Taxes (all levels)<br>Taxes contributed to municipal, provincial, and federal levels of government by initial cruise passenger spending | $1,700,000,000 | $59,951,153 | 3.5% |
| Employment (jobs)<br>Includes part-time and full-time work generated | 113,081 | 3,466 | 3% |

Source: Prepared by Dobson 2001, derived from Tourism Vancouver, BC Stats.1999. The Greater Vancouver Convention and Visitors Bureau.
http://www.tourismvancouver.com/docs/help/research/research_economic_impact.html

## 2.2 Cruise Characteristics that Affect Expenditures

The above statistics provide some context for the scale of the cruise ship industry but the economic effects of cruise ships arriving in British Columbia are more complicated. For obvious reasons, cruise passengers spend less than land-based tourists as a cruise is essentially a self-contained, fully pre-arranged vacation experience. Nevertheless, cruise ship passengers do contribute to the economy of Vancouver and British Columbia and in a wider variety of ways. The cruise ship industry may only represent a small percentage of tourism GDP, but it has grown more rapidly than other tourism sectors and the potential for growth exists. [22] Furthermore, the short exposure to British Columbia provided by the cruise experience may lead to return visits. In order to fully understand the economic impact of a cruise ship port of call, it is important to analyze the characteristics associated with cruise passengers to determine what areas, sectors, and businesses are benefiting and why.

[22] Munro and Gill, 2001. "The Economic Impact of the Cruise Industry on a Regional Economy" Conference Paper, Simon Fraser University.

### 2.2.1 Points of Departure and Arrival

The amount of cruise spending is largely based on pre- and post-cruise passenger visits. The length of time spent by cruise passengers in BC is increasing but remains a matter of personal choice. The 1999 Vancouver-Alaska Cruise Passenger Study conducted by Tourism Vancouver and the Vancouver Port Authority, surveyed all passengers, with the exception of the in-transit group, asking them to provide details of their pre- and post-cruise travel. The results showed that 65% of respondents reported adding one or more nights to their vacation either before or after their cruise[23]. The study also revealed that Vancouver was the most popular pre/post destination among all cruise passengers. Forty-two percent of all respondents reported spending at least one night in Vancouver, with an average stay of 2.0 nights. Twenty-three percent of respondents reported spending a day in Vancouver, with an average stay of 4.2 hours[24].

The length of visit time in BC is largely dependent on the type of cruise undertaken. If the point of origin and destination of a passenger's cruise is Vancouver then the visitor is more likely to spend more time in Vancouver. Passengers whose cruise originates in Vancouver also spend more time in BC than those for whom Vancouver is the destination. Vancouver receives the greatest economic impacts from passengers since most cruises operating in the region pass through the Port Vancouver. Only 10% of cruises visit Victoria and no major cruise ships (i.e., those carrying more than 500 passengers) visit any other ports in BC at this time. Four percent of cruise passengers reported an overnight stay in Victoria, while eight percent made a day visit, spending an average of 6.9 hours in that city. As many as 1% percent indicated a night stay in Whistler.

### 2.2.2 Average Cruise Passenger Expenditures

The 1999 cruise passenger survey also asked cruise passengers, who spent time in Canada on their trip, to provide an estimate of total expenditures for all members of their travel party. Data were collected for individual expense categories such as food, lodging, and transportation and then adjusted by party size to obtain per person expenditures.

A breakdown of cruise ship passengers' responses by general category of Vancouver expenses was outlined by Munro and Gill in their conference paper, *The Economic Impact of the Cruise Industry on a Regional Economy* (Table 4). Munro and Gill, both professors at Simon Fraser University in Canada, have been conducting an independent economic analysis of the Canadian Pacific cruise ship industry using newer technology for calculating economic estimates. According to their calculations, lodging represented the largest expense category, with an average of $138.59 reported spent by cruise visitors to Vancouver. Average expenditures increase with length of stay. The average day visitor spent $75 which was similar to expenditures reported by in-transit passengers, who are also day visitors to the city. The average expenditure per overnight passenger per day was $298.42.

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[23] Brown, S. 1999. "Vancouver-Alaska Cruise Passenger Study" Vancouver: Inter*Vista* Consulting Inc.
[24] Brown, S. 1999. "Vancouver-Alaska Cruise Passenger Study" Vancouver: Inter*Vista* Consulting Inc.

**Table 4: Vancouver Cruise Ship Passengers' Average Expenditures by Length of Stay**

| | Average Total | Day Visitor | One Night | Two Nights | Three+ Nights | In Transit |
|---|---|---|---|---|---|---|
| Vancouver Expenditures | $300.00 | $75.00 | $210.00 | $370.00 | $610.00 | $75.00 |

Source: Munro and Gill, 2001

To better illustrate the economic impact of passengers into British Columbia, Munro and Gill constructed total impact estimates for the 'minimum' and 'maximum' passenger based on the general statistics provided on cruise passengers characteristics accumulated in the 1999 Passenger Survey. Income and employment multipliers have also been factored into the passenger profiles which account for other cruise ship economic contributions such as maintenance, re-supplying, services onboard, refueling, port dues, pilotage etc.

### 2.2.3 Minimum Economic Impact

The minimum economic impact passenger has an average annual income of $40,000 CAD and travels on a standard-level, 2000 passenger size ship on a one-way 7-day cruise with passenger embarkation in Alaska and disembarkation in Vancouver. One-half day is spent in Vancouver. This passenger would spend perhaps $40 in Vancouver, perhaps on a half-day tour. The direct GDP impact of this would be $22 and the total impact on the regional output would be multiplied by perhaps 1.6 to increase regional GDP by $35[25].

Literature on employment multipliers for BC tourism suggests that spending by this passenger would lead to an employment impact in the range of 40/50,000; 1,250 passengers staying one-half day and spending $40 would lead to a one person-year of employment. Cruise lines expenditures averaged about $500,000 per sailing so this passenger's share of this spending would be $250. Output and employment multipliers would increase total GDP impact to $220 and one-person year of employment per 200 passengers. Crew expenditures at $15 per crew member per visit would total $15,000 or $7.50 per passenger, multiplied to $7 total GDP impact and one person-year for every 6,700 passengers. Total impact per passenger is $249 (GDP) and .0059 person-years (employment).

[25] Multipliers are based on a tourism-specific estimate for BC by Var and Quayson (1985) – they estimate an income multiplier in the 1.7 range and an employment multiplier of 1 job for $11,000 of tourist spending.

### 2.3.4 Maximum Economic Impact

The maximum economic impact passenger has an annual income of $100,000 CAD and travels on a luxury-level, 1000-passenger size ship on a round trip 12-day cruise. Three days are spent in British Columbia. This passenger's spending totals $500, creating a total regional GDP impact of $440 and one person-year of employment for every 1000 passengers.

This passenger's share of cruise company expenditures is $350 with GDP and employment impacts of $300 and one person-year of employment for every 140 passengers. Crew members' spending at $20 per crew member would total $11,000 or $11 per passenger – this multiplies to total impacts of $10 for GDP and one person-year for every 4500 passengers. Total impact is $750 (GDP) and .0172 person-years (employment).

### 2.3.5 Estimated Impact

Munro and Gill's passenger impact assessment showed the 'maximum' typical passenger impact as being 3.4 times larger than the 'minimum' passenger for both GDP and employment. They subsequently multiplied the passenger's impact by a total annual cruise market of 1 million, suggesting the total GDP impact was between $249 million and $750 million; employment impact ranged between 5,900 and 17,200. Of course, it is unlikely that either maximum or minimum passengers would typify the market and thus Munro and Gill presented the half-way point between those estimates, approximately $500 million and 11,500 person-years of employment, as the estimated impact. A 1999 study by the North West Cruise Ship Association[26] estimated $507 million GDP impact and 5,243 jobs.[27]

### 2.3 Trickle-Down Economic Impact

It is difficult to document exactly where cruise passengers spend their money in British Columbia, however many sectors and local businesses have their own estimated economic impact figures. Tourism Vancouver, the area's Convention and Visitors Bureau, put the economic total of the cruise ship industry at $124 million, with approximately $81 million in wages and salaries and $60 million in taxes generated by cruise passengers' spending[28]. But aside from a handful of hotels near the Canada Place complex, which includes the cruise terminal and the convention centre, most of the benefits are diffused through the local economy rather than concentrated at dockside. They range from higher occupancy rates at Vancouver-area hotels, to more business for food-and-beverage suppliers. "Every time you see a ship coming into the harbour, think

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[26] The North West CruiseShip Association is a not-for-profit association working on behalf of the nine member lines to build positive relationships with communities and government agencies and to develop strong partnerships with communities and business in Canada, Alaska and the Pacific Northwest.
[27] North West CruiseShip Association, 2000
[28] Tourism Vancouver, BC Stats.1999. The Greater Vancouver Convention and Visitors Bureau. http://www.tourismvancouver.com/docs/help/research/research_economic_impact.html

of it as $1.5 million entering the local economy," said David Stowe, Chairman, for the Vancouver Port Authority.[29]

R. Gordon Johnson, president of the Vancouver Hotel Association, estimated that 10 to 15 hotels near the cruise terminal or elsewhere in downtown get the bulk of the cruise business. Johnson, who is also general manager of the Delta Vancouver Suites hotel just three blocks away from the main dock, said that on a "good cruise ship day," as many as 40% of his hotel's rooms are occupied by cruise passengers. But the bulge of the cruise passengers pushes up occupancy rates throughout the whole city, as people who cannot find rooms downtown seek lodging elsewhere. "The cruise industry is probably the single biggest thing that affects us every summer, but it is not the only thing," said Johnston.

### 2.4 Economic Impact on Canadian Pacific Ports

#### 2.4.1 Vancouver

The total GDP resulting from Port Vancouver activities totals $1.68 billion of value added to the Canadian economy (direct, indirect and induced impacts). This involves industrial production (total spending) of $2.82 billion, wages and salaries of $710 million, and payment to Governments (taxes) of $520 million.[30] The cruise industry attracts over one million revenue passengers (Figure 5) and directly creates two percent of the employment in the Vancouver Port Authority or 60 FTE[31] jobs. By comparison, in 2000, Port Vancouver received 3,049 port calls by international container vessels in and 334 ports calls by cruise ships.[32] The following graph shows a 0.3 percent decline, as of August 2001, in revenue passengers from 2000 to 2001.

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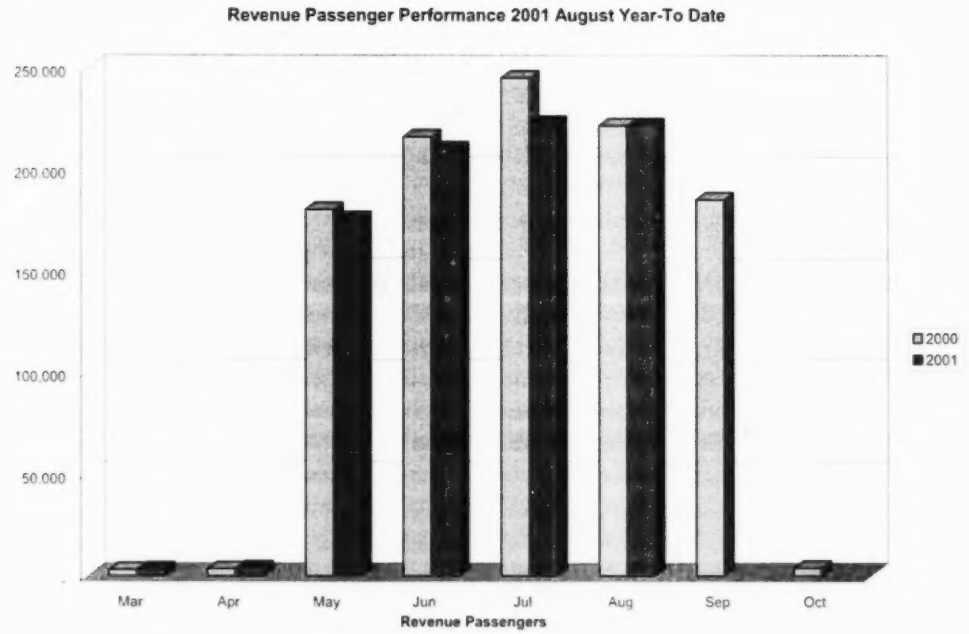
[29] Morris, Linda, 2001. News Release. Vancouver: Vancouver Port Authority. http://www.portvancouver.com/frames/portcorp/nr_0037.html

[30] Port Vancouver, Annual Report 2000. Vancouver Port Authority. http://www.portvancouver.com/frames/index.html

[31] Full Time Equivalent positions

[32] Port Vancouver, Annual Report 2000. Vancouver Port Authority. http://www.portvancouver.com/frames/index.html

**Figure 5**




Source: Cruise Ship Passengers YTD, August 2001, Port Vancouver.
http://www.portvancouver.com/frames/index.html

### 2.4.2 Victoria

Victoria, British Columbia's capital, is an occasional port of call during the Alaska cruise season, especially at the beginning or at the end of the cruise season, when cruise lines have unique itineraries as they reposition their ships from the south to the north, or vice versa. A few cruise itineraries, which begin in San Francisco or elsewhere in the south, will often head straight to Alaska, stopping only in Victoria, and not detouring into the Inside Passage which is necessary to get to Vancouver. Victoria will witness 108,176 passenger arrivals by 68 port calls in the 2001 season. However, most cruise passengers who visit Victoria will do so as part of their pre-cruise or post-cruise stay in Vancouver. Victoria is also part of a new market of short distance cruises being offered between Seattle, Vancouver, and Victoria in the off-season.

**Table 5: Cruise Ship Arrivals into Victoria in 2001**

| Cruise Line | Vessel | Port Calls | Passenger Cap. | Crew Cap. | Total Pass. | Total P&C |
|---|---|---|---|---|---|---|
| Celebrity Cruises | Infinity | 2 | 1,950 | 999 | 3,900 | 5,898 |
| Celebrity Cruises | Mercury | 1 | 1,870 | 909 | 1,870 | 2,779 |
| Cruise West | Spirit of Oceanus | 6 | 114 | 65 | 684 | 1,074 |
| Crystal Cruises | Crystal Harmony | 8 | 960 | 545 | 7,680 | 12,040 |
| Norwegian Cruise Line | Norwegian Sky | 21 | 2,002 | 750 | 42,042 | 57,792 |
| Radisson Seven Seas Cruises | Seven Seas Mariner | 5 | 700 | 445 | 3,500 | 5,725 |
| Royal Caribbean International | Radiance of the Seas | 17 | 2,500 | 859 | 42,500 | 57,103 |
| World Explorer | Universe Explorer | 8 | 750 | 365 | 6,000 | 8,920 |
| **Total** | | **68** | **10,846** | **4,937** | **108,176** | **151,331** |

Source: Cross-referenced material from Cruise Ship Schedule (Port Vancouver) to Cruise Ship's Facts Sheets (http://www.cruisecritic.com/reviews).

### 2.4.3 Prince Rupert

In 2001, Prince Rupert may receive over 2000 actual passenger and crew arrivals from two smaller cruising vessels. Currently, most definitions of a cruise ship, used by legislative powers, requires that the passenger capacity be 500 and above. As such, the two ships entering into Prince Rupert are not necessarily considered to be cruise ships, nor are they members of the NWCA operating on the Canadian Pacific coast.

**Table 6: Small Boat Cruise Ship Arrivals into Prince Rupert in 2001**

| Cruise Line | Vessel | Port Calls | Passenger Cap. | Crew Cap. | Total Pass. | Total P&C |
|---|---|---|---|---|---|---|
| Cruise West | Spirit of Oceanus | 11 | 114 | 65 | 1,254 | 1,969 |
| Clipper Cruise | Clipper Odyssey | 1 | 128 | 72 | 128 | 200 |
| **Total** | | **12** | **242** | **137** | **1,382** | **2,169** |

Source: Cross-referenced material from Cruise Ship Schedule (Port Vancouver) to Cruise Ship's Facts Sheets (http://www.cruisecritic.com/reviews).

A recently completed economic impact analysis published by *Harbour and Shipping*, and displayed on the NWCA website, suggested that the Port of Prince Rupert is ideally located to participate in the continued growth of the Alaska cruise industry. An expanded cruise industry could generate $9 million in annual economic impact to the economy of northwest British Columbia, the creation of 140 jobs, an estimated $3.8 million in annual payroll and nearly $2 million in annual provincial and federal tax revenues.[33] The Port, in cooperation with the City of Prince Rupert, is currently completing a Cruise Ship Facility Development Plan that will steer the course of development of infrastructure suitable for accommodating the increasing number of vessels sailing to Alaska.

[33] Harbour and Shipping, Prince Rupert Eyes Alaskan Cruise Industry. http://www.alaskacruises.org/166.cf, form the NWCA website.

## 3.0 Environmental Impact

The environmental issues surrounding the cruise industry attract attention, create controversy, and are a misunderstood component of the cruise industry today. Currently, there exist many pieces of legislation that regulate cruise ships and their interactions with the environment. A detailed analysis of the relevant legislation and how it applies to the cruise industry will only serve to further complicate any future understandings in this area. Instead, a brief overview of the most relevant legislation will be presented, followed by an analysis of the current state of the environmental debate.

### 3.1 Safety and Security

Before conducting an analysis on the environmental legislation, the issue of safety and security needs firstly be addressed. Safety and Security aboard cruise vessels and within cruise ship ports is of primary importance to international and federal governing bodies. The mere possibility of economic, environmental or human life disasters resulting from a cruise ship-related incident, have forced comprehensive safety regulations. The International Maritime Organization and Canadian federal departments including Transport Canada and Health Canada thus require and ensure the existence of a high level of safety standards as a priority.

Transport Canada includes cruise ship safety guidelines under its Marine Transportation Security Regulations (Cruise Ships and Cruise Ship Facilities). Other safety regulations are inherent in the *International Management Code for the Safe Operation of Ships and for Pollution Prevention* which will be outlined further in the subsequent section. Although safety has been deemed the number one issue with regards to cruise ships and the potential dangers they pose, Transport Canada ensures that satisfactory regulations are in place to ensure safety, and that required monitoring and inspections need to be ongoing.[34]

The Canadian Occupational Health and Safety Agency (OHSA), of Health Canada is also mandated to carry out public health inspections on international passenger conveyances. These inspections are conducted to verify the integrity of the on-board Food Service Program such as food preparation and handling, the Potable Water System and general vessel hygiene/ sanitation. The purpose of these inspections is to protect the health of the travelling public as well as citizens in the ports of call from illnesses that may occur on cruise ships. Unannounced inspections are conducted on cruise ships travelling in Canadian waters. The inspections are conducted once per year during the cruise ship season, which extends from April to the end of October in the Canadian Pacific. These inspections are part of a voluntary inspection program. A satisfactory score is 86 points out of a possible 100 points. A score of 85 or lower is not satisfactory and requires a re-inspection within the following month. [35]

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[34] Personal Communication with Charles Hansen, 2001. Transport Canada: Marine Safety Compliance & Enforcement. Vancouver.

[35] Occupational Health and Safety Agency: Policy and Legislation. 2000. "Cruise Ship Inspection Program" Health Canada: Ottawa

It is vital to the cruise ship industry that food and water-borne illness are avoided. In 1999, OHSA inspected a total of 48 ships (20 on the east coast and 28 on the west coast) and did not witness a single outbreak.[36] Only one ship failed to pass the inspection.

### 3.2 Brief Overview of Legislation

In an article, *Safe Today Is No Guarantee For Tomorrow (1998),* Det Norske Veritas'(DNV:1) Dr. Tor-Christian Mathiesen, wrote about the greater expectations facing the maritime industry with regards to safety and the environment. He stated that "the answer is not the introduction of more rules and regulations. The challenge is to ensure compliance with all the rules and regulations we have today."[37] The major problem in tackling Dr. Mathiesen's challenge is the ability to understand the current rules and regulations that apply to cruise ships on the Pacific coast. The applicable legislation comes from acts and conventions that exist at international, regional, federal, and provincial levels (Figure 6).

#### 3.2.1 International Legislation

All cruise ships, operating in international waters are subject to strict international standards and regulations set forth by the International Maritime Organization (IMO), an arm of the United Nations. The International Convention for the Prevention of Pollution from Ships (MARPOL, 1973/78) sets regulatory standards to prevent the discharge of wastes and cargoes from operational and accidental causes. This convention regulates water discharge, air quality, on-board solid waste management. The MARPOL convention is applicable worldwide. It consists of the Articles, which contain general regulations and definitions, and six Annexes dealing with different types of marine pollution by ships. Annex I, Prevention of pollution by oil entered into force on 2 October 1983; Annex II, Control of pollution by noxious liquid substances entered into force on 6 April 1987; Annex III, Prevention of pollution by harmful substances in packaged form entered into force on 1 July 1992; Annex IV, Prevention of pollution by sewage from ships is not yet in force; Annex V, Prevention of pollution by garbage from ships entered into force on 31 December 1988; and Annex VI, Prevention of Air Pollution from Ships is not yet in force.

One of the Annexes most relevant to cruise ships and the environment is Annex IV, 'Regulations for the Prevention of Pollution by Sewage from Ships'. Although Annex IV was drafted to regulate sewage discharge from vessels, it has not entered into force, nor has it been ratified by either the United States or Canada. In the case of states that do abide by it, the Annex applies to the cruise ships that are flagged in those countries. Regulation 10 of MARPOL Annex IV is the main reason why the annex has not been ratified by Canada, stating that…

The Government of each Party to the Convention undertakes to ensure

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[36] Health Canada, OHSA e-newsletter, June 2000, Issue #1, http://www.hc-sc.gc.ca/ohsa/enews_june00.htm#2

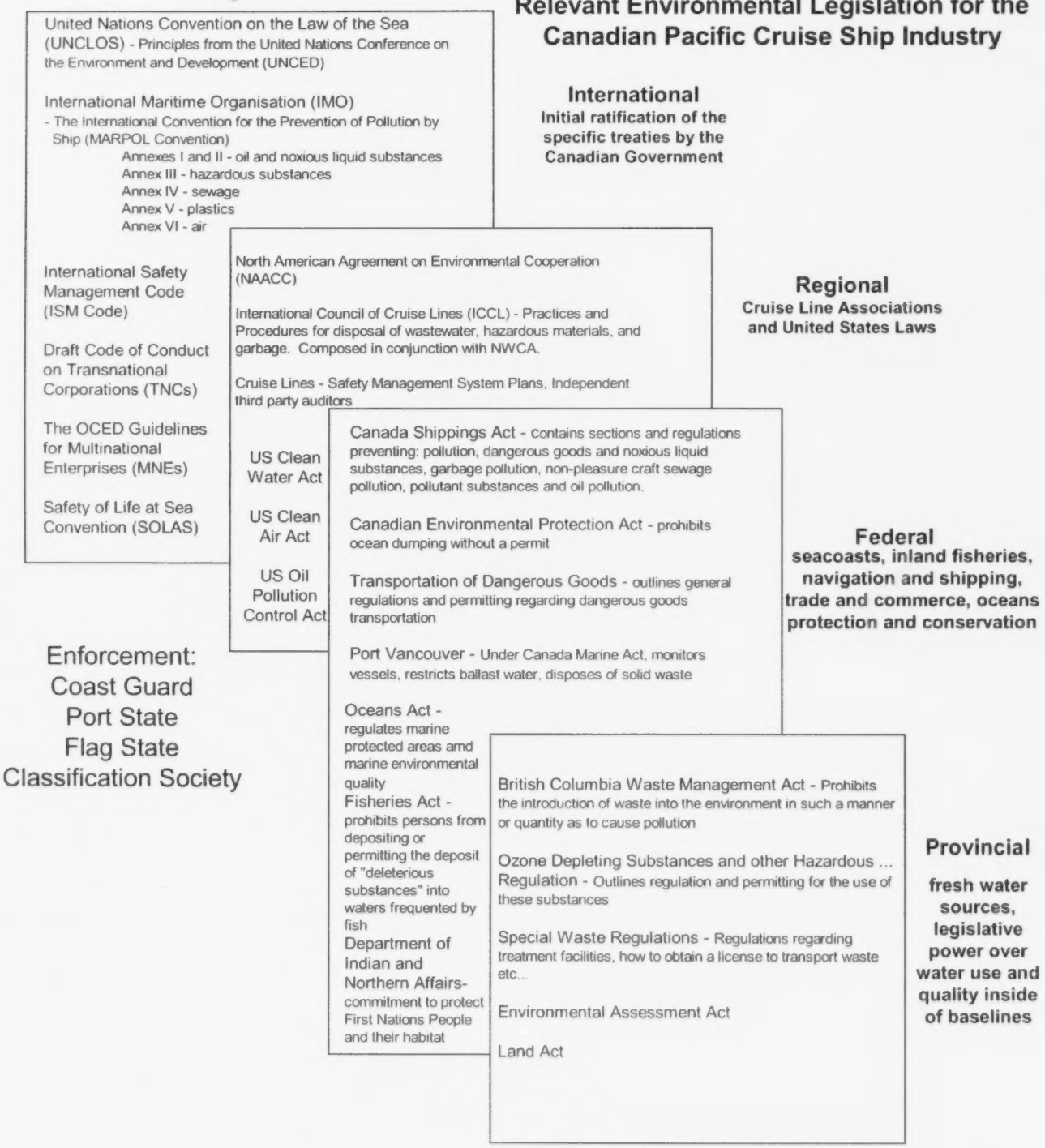
[37] Mathiesen, Tor-Christian. (1998). "Safe Today Is No Guarantee For Tomorrow" *Det Norske Veritas*, 1:2.

the provision of facilities at ports and terminals for the reception of sewage, without causing undue delay to ships, adequate to meet the needs of the ships using them. [38]

[38] Regulation 10. Annex IV of MARPOL 73/78

**Figure 6**

# Relevant Environmental Legislation for the Canadian Pacific Cruise Ship Industry


International
Initial ratification of the specific treaties by the Canadian Government
United Nations Convention on the Law of the Sea (UNCLOS) - Principles from the United Nations Conference on the Environment and Development (UNCED)
International Maritime Organisation (IMO)
- The International Convention for the Prevention of Pollution by Ship (MARPOL Convention)
Annexes I and II - oil and noxious liquid substances
Annex III - hazardous substances
Annex IV - sewage
Annex V - plastics
Annex VI - air
International Safety Management Code (ISM Code)
Draft Code of Conduct on Transnational Corporations (TNCs)
The OCED Guidelines for Multinational Enterprises (MNEs)
Safety of Life at Sea Convention (SOLAS)
Regional
Cruise Line Associations and United States Laws
North American Agreement on Environmental Cooperation (NAACC)
International Council of Cruise Lines (ICCL) - Practices and Procedures for disposal of wastewater, hazardous materials, and garbage. Composed in conjunction with NWCA.
Cruise Lines - Safety Management System Plans, Independent third party auditors
US Clean Water Act
US Clean Air Act
US Oil Pollution Control Act
Federal
seacoasts, inland fisheries, navigation and shipping, trade and commerce, oceans protection and conservation
Canada Shippings Act - contains sections and regulations preventing: pollution, dangerous goods and noxious liquid substances, garbage pollution, non-pleasure craft sewage pollution, pollutant substances and oil pollution.
Canadian Environmental Protection Act - prohibits ocean dumping without a permit
Transportation of Dangerous Goods - outlines general regulations and permitting regarding dangerous goods transportation
Port Vancouver - Under Canada Marine Act, monitors vessels, restricts ballast water, disposes of solid waste
Oceans Act - regulates marine protected areas amd marine environmental quality
Fisheries Act - prohibits persons from depositing or permitting the deposit of "deleterious substances" into waters frequented by fish
Department of Indian and Northern Affairs- commitment to protect First Nations People and their habitat
Enforcement:
Coast Guard
Port State
Flag State
Classification Society
Provincial
fresh water sources, legislative power over water use and quality inside of baselines
British Columbia Waste Management Act - Prohibits the introduction of waste into the environment in such a manner or quantity as to cause pollution
Ozone Depleting Substances and other Hazardous ... Regulation - Outlines regulation and permitting for the use of these substances
Special Waste Regulations - Regulations regarding treatment facilities, how to obtain a license to transport waste etc...
Environmental Assessment Act
Land Act

Originated by Dobson, 2001

*complied through a review of legislated policy.
Aided by Oceans Blue Draft Paper on Environmental Cruise Ship Legislation 7

Currently, the decision to provide reception facilities for cruise ships along the Canadian Pacific coasts does not lie in the hands of the federal government. The decision must be agreed upon by various departments residing in the province of British Columbia and within the Greater Vancouver Regional District (GVRD). Canada's Shipping Act contains most of the regulations required to comply with MARPOL's Annex IV within its other sections and regulations which aim to regulate shipping in Canadian waters.

The *International Management Code for the Safe Operation of Ships and for Pollution Prevention* (ISM Code) was developed by the IMO as it recognized that effective company management was paramount to ensuring marine safety guidelines and environmental protection. The ISM Code became a requirement for all transport vessels larger than 500 gross tonnes, except bulk carriers, in July 1998. Therefore, all cruise vessels are required to adhere to the ISM Code.

The objective of the ISM Code is to require companies to develop and maintain a safety management system (SMS) that will ensure the safety of the crew, passengers, vessels, cargo and the environment. The SMS contributes to increased employee knowledge and proficiency in dealing with their daily work and possible emergencies. It deals systematically with everything involving employee safety, vessel operation and maintenance, handling of cargo and environmental pollution prevention. Under procedures established by the IMO, companies that demonstrate compliance with the ISM Code will be issued a Document of Compliance. Vessels owned and/or operated by these companies will subsequently be issued a *Safety Management Certificate (SMC)* to be displayed on board the vessel.

The ISM Code provides specific guidelines to companies for developing an effective SMS, including…

- A safety and environmental protection policy;
- Instructions and procedures for ensuring safe vessel operation and environmental protection in compliance with relevant international, flag state, and domestic law;
- Defined levels of authority and lines of communication between and among shipboard and shoreside personnel;
- Procedures for reporting accidents and non-conformities;
- Emergency preparedness and response procedures; and,
- Internal audit and management review procedures.[39]

The ISM Code also requires that individual companies designate a shoreside person (or persons). This designated person (DP) has direct access to the highest level of management. The aim here is that they are authorized and responsible for monitoring the safety and pollution prevention aspects of each ship in the company's fleet. They also ensure that adequate resources and shore-based support are supplied as needed.

According to the Safety of Life at Sea Convention (SOLAS) Chapter IX, the ISM certification and enforcement of SMS lies within the responsibility of the corresponding flag state. Internationally, passenger ships must also meet the requirements of their

[39] Brown, Michael T. (1999). Marine Voyage Data Recorders. Marine Transportation Safety Specialist National Transportation Safety Board. Washington, DC.

respective Classification Society in addition to the SOLAS. Ships without proof of a certified plan could be denied insurance coverage or entry into the world's major seaports.

Classification Societies are private, third party organizations whose main function is to inspect the ship at regular intervals to ensure its seaworthiness, the ship's structure, and machinery, are being maintained as required by classification societies rules. Classification societies will also inspect cruise ships for compliance with international safety regulations including SOLAS, SCTW (Standards for Training Certification and Watchkeeping which ensures crew competency) and MARPOL.[40] Major classification societies include the American Bureau of Shipping, based in the U.S.; Lloyd's Register of Shipping, in the United Kingdom; Det Norske Veritas, in Norway; Bureau Veritas, in France; and Registro Italiano Navale Group, in Italy. Lloyd's Register is the premier classification society for passenger ships, with over 47 percent of the world passenger fleet currently classified with them.

Furthermore, in a 1997 article for *IMO News*, the senior deputy director of the IMO's Maritime Safety Division stated that Port States shall also have a degree of control in the monitoring and enforcement of adherence to the ISM Code.

> Port State control is the inspection of foreign flag vessels visiting national ports - has been described as the last safety net in marine safety. In an ideal world, Port State control would not exist, but when ship-owners, classification societies, insurers, or Flag administrations have in one way or another failed to do their job, Port State control comes onto the scene. Port State control is recognized as being a step in the right direction towards the eradication of substandard ships, when inspections are carried out in accordance with IMO Assembly resolutions and recommendations.

Subsequent to the IMO Maritime Safety Division's announcement, the Canadian Port State Control announced its inspection regime for the ISM Code. This inspection regime applies to all ships entering Canada:

i. The countries of the Paris Memorandum of Understanding (Europe and Canada) have stated that they will detain uncertified ships, inspect them thoroughly and, in the absence of other deficiencies, let them sail with a ban on further entry until their ISM Code preparations are complete. The US has adopted a more radical approach, requiring ships to give advance notice that they have ISM Code certification and denying them entry if not.
ii. Usual Port State Control procedures will be applied to target ships for PSC inspections.
iii. Ship will be detained on discovery of non or invalid certification and/or major non-conformities.
iv. Cargo operations will be halted immediately upon discovery of non-compliance; each occurrence will be dealt with on a case by case basis to permit

[40] The International Council of Cruise Lines. 2001. "Cruise Industry FAQs: Useful Terms and Phrases." http://www.iccl.org/terms.htm

loading/unloading of cargo once it is determined that the company/ship can meet all safety requirements to the satisfaction of the Canadian authority and its representatives.

v. Once corrective action to rectify deficiencies is taken and the ship is deemed seaworthy by the Marine Safety Inspector, detention can be lifted subject to the following:
-concurrence received from flag state;
-warning letter issued to master and owner stating need for compliance if ship returns to Canada.

vi. IMO will be notified of any detentions in accordance with existing PSC procedures.

vii. Marine Safety Inspector will enter particulars in PSC database(s).

viii. Ship name will be listed in quarterly detention list (published) and lack of ISM certification identified.

ix. All ships of same ownership or ship management will be targeted for stringent PSC inspections. [41]

### 3.2.2 Regional Legislation

Regionally, all cruise ships that operate in American waters must comply with US environmental laws, including the *Clean Water Act*, the *Clean Air Act* and the *Oil Pollution Control Act*. The US environmental regulations for cruise ships are extremely relevant to Canada as almost all cruise ships entering Canadian waters have stops in the US within the same week. Vessels are therefore required to adhere to US legislation once within US waters and the mechanisms required for that level of compliance must be ongoing to function. That being said, the Cruise Lines and their associations (NWCA, ICCL) have their own set of voluntary environmental policies and regulations that in many cases exceed or at least match the federal legislative requirements of the US. The cruise ship industries currently operating on the Canadian Pacific coast have adopted the following environmental practices with regard to discharge:

- No discharge of black water (treated or untreated sewage) in port
- No discharge of gray water (sink or shower water) in port
- Discharges of treated black water and gray water conducted when vessel more than 10 miles from port call and proceeding at 6 knots or faster.
- Discharges are not conducted when a cruise vessel in within a mile from any surrounding shore and/or restricted dumping locations as advised by federal regulations.[42]

Through the IMO, the International Council of Cruise Lines (ICCL), also developed consistent and uniform international standards that apply to all vessels engaged in international commerce.[43] These standards were introduced in July, 2001.

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[41] Marine Safety Directorate (1998) * the first enforcement regulation (i) has been updated in coordination with the Paris MOU signed by Europe and Canada.

[42] Vogt, Craig. 2001. "Environmental Concerns for Ports and Cruise Lines" Washington, D.C.: EPA.

[43] ICCL Industry Standard E-0101
Cruise Industry Waste Management Practices and Procedures

All cruise ships with membership in the ICCL are also required to use one or more of the practices and procedures contained in the new regulations in the management of their shipboard waste streams. These practices and procedures cover high volume wastes (garbage, graywater, blackwater, oily residues and bilge water), pollution prevention, and hazardous wastes produced onboard (dry cleaning liquids, film processing chemicals, biomedical wastes etc.).

The ICCL standards have incorporated environmental performance into SMS and MARPOL mandated Waste Management Manual. The standards are therefore, enforceable by the classification society, the flag state, and the port state. Violations of the ICCL standards are equivalent to violations under the ISM Code and punishable as such. Canada, as a Port State, has the right to refuse entry to, or detain, any vessel that does not adhere to its SMS.

### 3.2.3 Federal Legislation

The ISM Code outlined above holds in its legislation a law that requires vessels to adhere to the relevant international, flag state, and domestic laws governing their actions. Thus under the agreements and laws specific to Canada, ISM and MARPOL programs are routinely reviewed by Port States to ensure compliance.[44] Discharging by cruise ships in Canada, for example, is regulated through different acts almost entirely at the Federal level. First, the dumping of garbage is prohibited under the Shipping Act. Second, the *Canada Shipping Act* further prohibits the dumping of sewage in certain bays and inlets along the coast of British Columbia. Revisions to the *Canada Shipping Act* (2000) have identified a series of no-dumping zones along the BC coast in its Pleasure and Non-Pleasure Craft Regulations. Third, most other possible waste streams from cruise ship activity that would fall under special or hazardous material categories can be regulated by the *Canadian Environmental Protection Act* and the *Transportation of Dangerous Goods Act* although no specific rules currently exist for cruise ship waste streams . Finally, sewage or gray water that contains hazardous material or regulated chemicals will be legislated with regard to those contents.

Additional acts exist within Canada's federal powers, including the *Oceans Act* and *Fisheries Act*, that could be applied to guide and/or regulate the cruise ship industry but have not been used for that purpose to date. The Department of Indian and Northern Affairs has also made a commitment to work together with First Nations to improve the health and safety of their communities that may need to incorporate cruise ship environmental issues if legal discharging impacts First Nations' lands.

Port Vancouver, a quasi-governmental body also sets out regulations against vessels entering and berthing in its harbour. One of the regulations that the Port Vancouver has is its bylaw 6H, which restricts the importation of ballast water. Ballast water is water that is taken aboard the cruise vessel at the point of departure usually to enhance stability. This water then becomes a foreign substance once introduced into a different marine environment. In 2000, the Vancouver Port Authority reported a better than 99 percent compliance rate with its mandatory mid-ocean ballast water exchange

[44] ICCL Industry Standard E-0101
Cruise Industry Waste Management Practices and Procedures

program. This program was initiated in 1997 and became compulsory under the *Canada Marine Act* in 1999 to prevent the introduction of non-native species into Burrard Inlet.

Also in 2000, Operations and Harbour Master staff boarded more than 98 percent of the deep-sea vessels that call on Port Vancouver, sealing bilge valves, checking ballast water for contaminants, providing hold washing inspections and holding pre-bunkering inspections[45]. These vessel inspections significantly reduced the potential for accidental discharge of pollutants that may considerably impact the safe, efficient, and uninterrupted flow of cargo through Port Vancouver.

### 3.2.4 Provincial Legislation

Existing provincial legislation works similarly to the Federal legislation in that the ISM Code stipulates that domestic laws be followed. Some of the provincial legislation that can be applied to cruise ship environmental activities includes the *British Columbia Waste Management Act, Land Act, Special Waste Legislations, Environmental Assessment Act, Ozone Depletion and Other Hazardous Waste Regulation.*

The provincial legislation operates however, in a different spectrum than the federal legislation in that anything coming off any vessel and landing in provincial territory is covered by provincial acts and regulations. For example, cruise vessels would require approval of the *British Columbia Waste Management Act* for the disposal of garbage ashore.

## 3.3 The Debate

*NGO Perspective*

The issues of both trust and science, or lack thereof, have contributed to confusion and fueled controversy between the cruise ship industry and environmental NGOs. The problem is that NGOs feel there is no satisfactory enforcement or scientific evidence to support or challenge the discharging presently occurring. The NGO community has adopted a precautionary approach to oceans governance and cruise ships that assume that their impacts are negligent until proven otherwise. In other words, some NGOs feel that until satisfactory scientific studies are conducted on the environmental impacts of cruise ships on oceans and coasts, the cruise ships and the bodies governing them should act as if their legal discharges are harmful to marine and human environments.

Currently the perception exists among some NGOs that impartial enforcement and monitoring have not been conducted to a satisfactory level within Canada. Most of the environmental auditing and reporting is being self-managed by the cruise ship industries and associations. NGOs criticize industry self-regulation as it possesses the potential for the falsification of logs and reports that demonstrate compliance. It is the individual cruise vessels themselves that report the majority of environmental accidents.

In almost all of the NGO publications on this matter, a United States General Accounting Office (GAO) report on Cruise Ship illegal discharging is cited. According to the GAO report, there were 104 confirmed cases of illegal discharge cases in North American waters from 1993 to 1998 by cruise ships and other vessels[46]. Most of these

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[45] Port Vancouver, Annual Report 2000. Vancouver Port Authority.

[46] United States General Accounting Office. 2000. Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain" GAO/RCED-00-48

involved the accidental discharge (72%) of oil or related substances. However, despite these incidents, none of which occurred in Canadian waters, there has been few violations occurring within Canada's jurisdictional boundaries. What is commonly not reported by NGOs when citing the GAO document is that cruise ships only represent four percent of all confirmed illegal discharge cases by these commercial international flagged ships during 1993-1998.[47] The GAO report also displays a dramatic decrease in pollution by cruise ships from 1993 to 1998 which went from 25 incidents to 9 in those five years. Although the GAO report does conclude by suggesting that more action is required to address the contribution of cruise ships to marine pollution, the flavour of the report is optimistic with regards to industry self-regulation and public/private partnerships.

**Land versus Cruise Ship Discharging**

**In order to provide a context to the actual volume of wastewater being discharged in Canadian waters a comparison can be conducted between cruise ship wastewater discharge to the Lower Mainland's regional sewerage and drainage system. The Lower Mainland's regional sewerage and drainage system serves nearly 2.0 million residents in 20 member communities with a total land area of almost 3,000 square kilometres. Its five treatment plants, 33 pumping stations, and 450 kilometres of trunk and interceptor sewers currently handle and discharge more than 416 billion litres of wastewater a year[48]. Three of the plants perform secondary treatment on their discharge and the other two only carry out a primary treatment.**

**If we assume that all 26 cruise ships dump 613 000 litres of wastewater a day, (800,000 litres was estimated by an ENGO which was based on a average ship carrying capacity of 2,700. This 800,000 litres was re-calculated based on the Vancouver cruise ship average carrying capacity of 2067 passengers resulting in an estimate of 612,444 litres) every day for the entire *160 day season, the cruise ships contribute 2.6 billion litres of wastewater a year. By comparison, the cruise ships on the Pacific coast in Vancouver and Alaska only contribute 0.63% of the total wastewater that the GVRD pumps into the waters surrounding Vancouver with its five waste processing plants. All of the cruise ships entering into Canadian waters are equipped with at least secondary treatment facilities or better.**

***Calculations were based on the highest estimated volumes of waste produced by cruise vessels and subsequently multiplied by numbers that were rounded up. In actuality, each cruise ship only spends approximately 2.5 days in motion in Canadian waters per one way trip, not the full 7 days which would also drastically reduce the volume of waste discharged in Canada.**

The other major issue fueling the NGO perspective is the lack of scientific evidence on the accumulation effects of cruise ship's legal discharges. Areas of concern include fecal coliform and Biochemical Oxygen Demand (BOD)[49] counts impacting water quality, mammal, bird, and sea life protection, and possibly human health. The high levels of fecal coliform found in cruise ship discharge testing during the 2000 cruise ship season in Alaska have brought these issues to the forefront.

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[47] United States General Accounting Office. 2000. Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain" GAO RCED-00-48

[48] GVRD, Lower Mainland's regional sewerage and drainage system

[49] BOD is the term used to describe the oxygen used up as suspended solids decay. BOD counts are important as the availability of dissolved oxygen in water is key to the survival of aquatic and marine life.

*Industry Perspective*

Cruise Lines are good business people. We cannot assume that environmental concerns always take precedence over economic profits in industry, however, good environmental behaviour has proven itself to be directly related to revenue and has thus begun a new paradigm of corporate environmentalism. Corporations can see the new relationships being formed between the environment, their reputation, their customers, their stakeholders, their comparative advantage and their profits. Involving environmental protection in the companies' mandates and mission statements is good business, and adhering to those standards maintains their reputation. This can be demonstrated using the two following scenarios:

**Scenario 1**: A cruise line has committed itself to a voluntary set of environmental standards that has led to its comparative advantage in the cruise market. The voluntary standards exceed existing international standards. The cruise company is aware that if they are accused of not adhering to that standard their reputation will be damaged. If proven guilty, their reputation will suffer even more drastically. If proven innocent, some of their reputation will be restored however, not to its pre-exiting level. Organisations have become aware of the importance of their reputation to their customers and stakeholders and hence the direct relationship to their comparative advantage and their profits. To avoid being accused of violating their own environmental regulations, cruise companies strive to exceed their own voluntary guidelines to avoid accusations.

**Scenario 2**: The cruise line again has committed itself to a voluntary set of environmental standards and for some reason has violated that standard while cruising. The cruise company can either self-report the violation and damage its own reputation, but at a repairable level, or they can pretend nothing happened, falsify their reports and continue to their destination. This lack of accountability is what most environmentally conscious people fear. The reality is however that if the vessel does not self-report the violation and is identified, the company will suffer more reputational damage than if they had taken responsibility.

The move toward ecologically sensitive behaviour has demonstrated to cruise companies that their environmental reputation has become important to their customers and stakeholders and thus gambling with that aspect of their corporate identity can be extremely damaging. It can be argued that cruise vessels may not act responsibly out of sincere environmental concern but rather because good business practice in the 21st century requires environmentally friendly behaviour. Certainly the self-reporting of incidents by cruise companies on the Canadian Pacific coast demonstrates aspects of this corporate environmentalism.

It is also important to note that the cruise industry has been developing new environmental policies and state of the art new technologies including the development and use of Rochem, Alpha-Laval, Hamworthy, Hydroxyl, and Zenon systems. Holland America's new Zenon system, developed by ZENON Environmental Inc., has the ability to purify black and gray water into near drinking water quality, and thus leads the field in

entrepreneurial and innovative solutions[50]. Most other cruise lines have adopted aggressive programs of waste minimization, waste reuse and recycling, waste stream management and shore side waste disposal that in many cases go beyond current international and domestic standards. Combined, the efforts of government and industry should be able to solve this debate with ongoing scientific and technological information and open dialogue. One problem that currently exists in Canadian Pacific is the lack of scientific investigation and advice by the federal level of government in aid of this very valuable industry. Currently, despite the growth of this industry, the federal government does not employ scientific staff dedicated to the study of waste stream effects from shipping, or their cumulative environmental impacts.

[50] Holland America. 2001. "Zenon Happens!: Holland America Ships Convert Wastewater to Near-Drinking Water Quality. Holland America Line, Seattle.

## 4.0 Socio-Cultural Impact

Cruise ships represent more than simply ocean-going vessels producing economic and environmental impacts. There is a third component to their operations that includes the direct and indirect impacts on humans beings from ships along the surrounding shores. Cruise ships, as an international industry in motion, impact not only the areas where they come into port, but the communities they pass along the way. The cruise industry therefore has many stakeholders, all with their own perceptions. Crew members frequently cross borders and enter different jurisdictional territories with varying labour regulations that also effect work environments.

### 4.1 Coastal Communities

A cruise ship carrying on average 2067 people will have greater obvious social and economic impacts on smaller areas than on larger cities. The citizens of small communities will see the ship arrive and then experience an influx of visitors around their community. As a result, the economic, environmental, and social effects become associated directly with the cruise vessel. Vancouver is also impacted by cruise ships, however the impacts are absorbed into other tourism and port activities. In other words, except in the surrounding hotels and businesses, the average citizen of Vancouver would not be able to distinguish a cruise ship passenger from any other land-based tourists or residents. It is thus more difficult for Vancouver residents to quantify the impacts of the cruise industry on their city.

The following Social Perception Cost/Benefit Analysis provides a summary of some of the potential opinions of smaller Canadian Pacific communities' members and First Nations groups when discussing the cruise ship industry. The opinions are based on conversations with residents and First Nations groups from smaller communities along the Canadian Pacific coast during the period from April, 2001 to September, 2001. A detailed study would be required for a comprehensive analysis on communities' perceptions.

**Table 7: Social Perception Cost/Benefit Analysis of Small Canadian Pacific Communities and their Interaction with Cruise Vessels**

| Factors | Perceptions on the Addition of Large Cruise Ships to Tourism Development. e.g. Prince Rupert, Port Hardy, Campbell River | Perceptions on the Impacts on Non-visited Coastal Communities that will be passed by Cruise Vessels |
|---|---|---|
| | **Economic Impacts** | **Economic Impacts** |
| **Benefits** | There are many benefits associated with bringing cruise ships to smaller port communities including economic diversification, the creation of jobs, and new local business. The introduction of the cruise industry may also rejuvenate an economy suffering from the loss of traditional economic activities. | There are limited benefits to coastal communities simply passed by cruise ships. It is possible that cruise passengers contribute indirectly by visiting smaller coastal communities before or after their cruise voyage. |

| | | |
|---|---|---|
| **Costs** | Having cruise ship tourism as the main, or in some cases the only, economic activity can cause dependency on a fluctuating industry. Tourism is based on supply and demand factors largely influenced by customer attitudes. If a community becomes reliant on tourism arrivals and the industry patterns change, the area may become depressed. | The economic costs would stem from the loss of species in traditional economic activities due to possible pollution impacts by passing cruise vessels. |
| | **Environmental Impacts** | **Environmental Impacts** |
| **Benefits** | Cruise ships may prove less damaging to the environment than traditional economic activities. The diversification of the economy may also create a balance between resource extraction in other resource-based industries and preserving the environment as a tourism asset. | Benefits could include an increase of land-based tourists to the area due to the exposure of their community's assets by the ship, without the need to receive the vessel or create a port facility.<br>The increase in tourism in one community may reduce economic activity in other resource sectors including fishing and logging. This may help conserve the existing resources in the surrounding areas by reducing extraction to sustainable levels. |
| **Costs** | Could be an increase in air pollution, damage to local fish, shellfish, and water mammal populations.<br>A worry concerning where the unloading of solid waste will be deposited.<br>Discontent over the lack of scientific information of the actual impact of cruise ships' discharges and their cumulative effects.<br>A worry that the smaller pocket cruise vessels are not as environmentally friendly as the larger ships. | Discharging may occur near their shores causing impacts to their health and damaging other resources (e.g. fish and shellfish).<br>Concerned about what may be contained in the discharges. |
| | **Socio-Cultural Impacts** | **Socio-Cultural Impacts** |
| **Benefits** | The attitude towards tourism development in many communities is very positive. The business community sees opportunities to strengthen, and individuals may envisage the creation of jobs. Both can lead to an increase in moral. The Campbell River First Nations Band reports that many in the community greet the idea of the addition of cruise ships to the tourism scene with much enthusiasm. | There are limited social-cultural benefits to communities simply passed by cruise vessels except that they are not being exposed to the negative social impacts as communities receiving the ports of call. |
| **Costs** | Increased migration to port communities.<br>Increased noise pollution.<br>Communities may be expose to large amounts of tourists on a consistent basis increasing tension among locals who feel they have lost their privacy.<br>Loss of ability to preserve traditional cultural behaviour.<br>Perceived health risks caused by cumulative legal discharging. | Complain of ships being an eyesore impacting the beauty and the peace in their communities.<br><br>Increased noise pollution.<br>Worry about their privacy if the vessels begin to travel to close to their homes. |

Some smaller communities along the Canadian Pacific coast have voiced concerns about the possible impact of cruise ships to their areas whether through indirect environmental effects and/or air and noise pollution. It is important for industry and government to consult with coastal communities to better understand their concerns. It is likely that many of the outstanding issues can be resolved through communication and cooperation.

### 4.2 International Cruise Ship Labour Laws

Another controversial issue, surfacing often in journals and articles, surrounds the cruise ship industry's treatment of its crew members which are usually composed of a variety of nationalities. The current model wage and hour scale established by the International Labor Organization, suggests a minimum wage of US$435 a month for low-level seamen who work 10 hours a day, seven days a week. In order to encourage the global enforcement of decent working standards in shipping, the International Labour Organization (ILO) Joint Maritime Commission has recommended a major overhaul of the various maritime employment standards that are applicable to seafarers worldwide in January 2001.

The ILO is considering consolidating all the current maritime labour standards into one instrument. Among the special annexes being considered for the new convention are general conditions of employment, health and safety, sickness and injury benefits, and food and accommodation.[51] The intention is that it should be easier for governments to ratify such a convention, enabling basic employment standards to be applied to all seafarers on all ships, regardless of their flag. Currently the ILO basic wage noted previously, only applies to Able Seamen. The rate will increase to US$450 in 2002, and US$465 in 2003.[52]

#### 4.2.1 Workplace Code of Conduct implemented on the Canadian Pacific Coast

The workplace code of conduct, established by the ICCL and applicable to all large ships on the Canadian Pacific coast, is a comprehensive, industry-wide commitment to safety and fair treatment of crewmembers in the shipboard work environment.[53] The conditions agreed upon by the ICCL for the workplace code of conduct were drawn from the United Nations which has established two specialized agencies to deal with international maritime issues: the International Maritime Organization (IMO) based in London and the International Labour Organization (ILO) based in Geneva. Both organizations have adopted conventions dealing with the safety, health and welfare of seamen. The most widely adopted convention that governs shipboard labour and crew employment practices is ILO 147. ILO 147 has been ratified by 40 countries, including Canada and the United States. Port states, such as Canada, have the authority to enforce crew safety regulations.

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[51] Increase to ILO minimum wage. Mariscene news. www.marisec.org/news/mariscne/maritext.htm
[52] Increase to ILO minimum wage. Mariscene news. www.marisec.org/news/mariscne/maritext.htm
[53] International Council of Cruise Lines: Cruise Industry Policies. 2001. "ICCL Shipboard Workplace Code of Conduct", http://www.iccl.org/policies/conduct.htm

According to the ICCL workplace code of conduct, crewmembers are afforded wages that are competitive with comparable international pay scales and provided employment opportunities and compensation packages that are equal to or exceed similar positions in the nations from which crew are recruited.[54] Depending on the position, there is also the opportunity for many crewmembers to earn gratuities. ICCL policy also includes recruiting at the trainee level and providing education so crewmembers obtain work skills that facilitate promotion and career development. In addition, all crewmembers receive room and board at no cost and live in a clean, well-maintained living environment. The crew areas on each ship shall be inspected on a regular basis by the ship's captain or his representative.

[54] International Council of Cruise Lines: Cruise Industry Policies. 2001. "ICCL Shipboard Workplace Code of Conduct", http://www.iccl.org/policies/conduct.htm

## 5.0 Looking into the Future

### 5.1 Challenges

- There is an absence of scientific literature to provide an indication of the cumulative environmental effects of vessel wastewater discharges (including that of cruise ships) in Canadian Pacific waters.
- The economic, environmental and socio-cultural impact of the cruise ship industry on new smaller port communities that are looking to attract cruise ships. For many smaller communities that have been experiencing difficulties with the loss of their traditional primary sectors (such as logging), tourism arises as an attractive alternative. Coastal communities need scientific advice to help them to weigh their options more effectively.

### 5.2 Promising Initiatives

- Oceans Blue Foundation's[55] cruise ship stewardship initiative provides incentive for creating partnerships between industry and government. Its idea of future initiatives incorporating an open and democratic process for establishing guidelines, voluntary regulations, and satisfactory monitoring and enforcement procedures have merit and deserve future examination.
- The ICCL has published new regulations on practices and procedures to be carried out by all its member lines where compliance with such is a condition of membership. These guidelines are timely and suggest that a future partnership between industry and government is possible. Having uniform and effective standards of behaviour for all cruise ships (including those under 500 passengers) on the entire Canadian Pacific coast will serve to reduce negative environmental impacts. Government establishing a memorandum of understanding with the ICCL or NWCA could be a step in the right direction.

### 5.3 Areas for Future Study

- Examining the partnership arrangements that could exist between industry and government. The social and environmental responsibility paradigm entering into the private sector corporate mentality provides an opportunity for the public sector to work with industry to encourage "beyond compliance" behaviour. An analysis of this nature could be a valuable element of the Canadian oceans strategy under the Oceans Act.
- A study on the prospect of the cruise industry combining with government initiatives to assume a greater role as an oceans advocate and oceans educator. Such a public/private partnership could provide for public education and awareness

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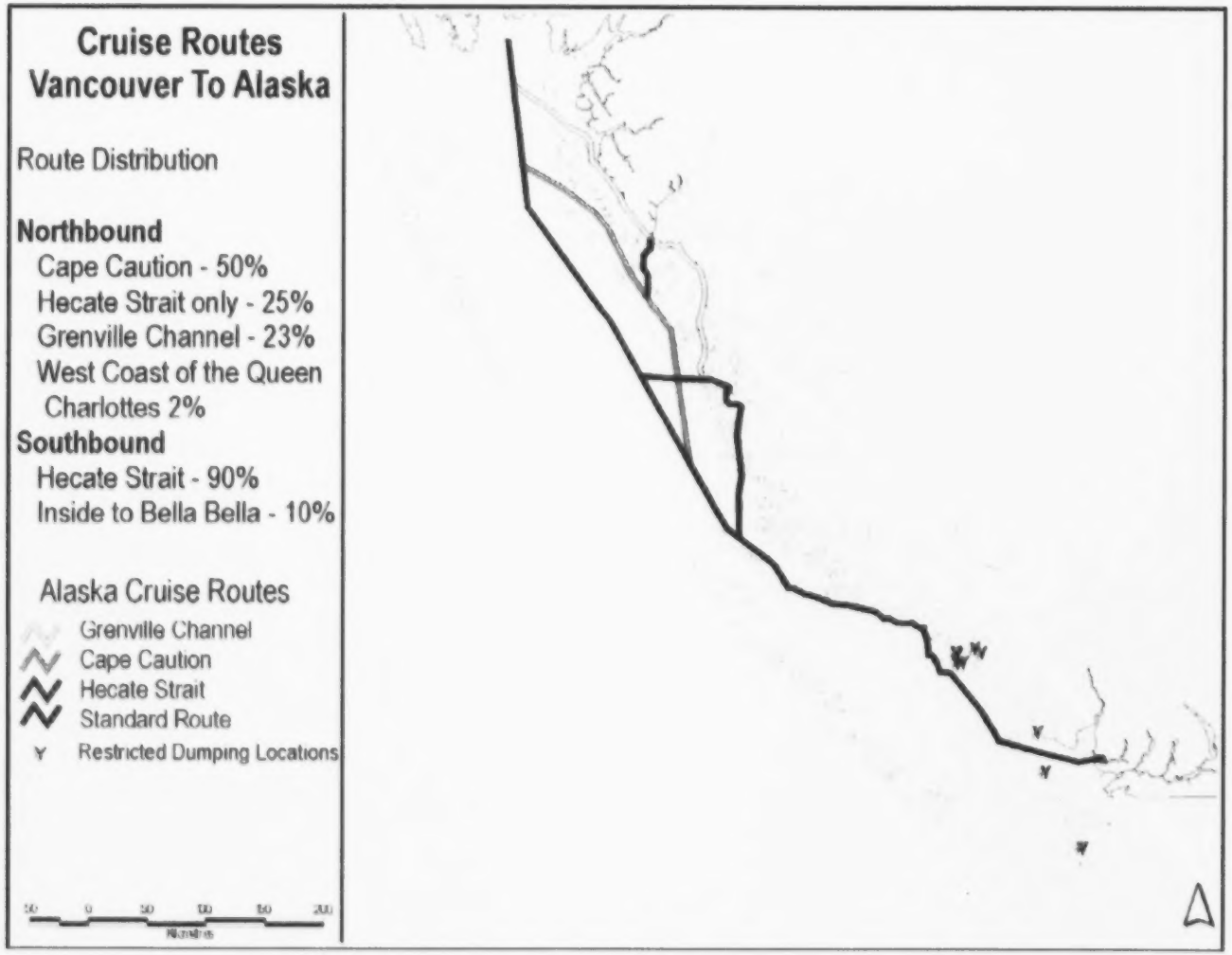
[55] Oceans Blue Foundation, founded in 1996, is a Canadian environmental charity committed to the conservation of blue and green - or marine and terrestrial - environments through education and awareness. Oceans Blue Foundation is the first charity in Canada to focus on developing environmental 'best practices' related to tourism.

campaigns and some limited learning opportunities for passengers while aboard on various marine related matters.

- Currently, NGOs are concerned about cruise ships and their impact on the environment, especially in light of Alaska's new regulations aimed directly at the cruise ship industry that strictly enforce good environmental behaviour. They feel their concerns require new Canadian legislation. Perhaps a document summarizing existing legislation and enforcement practices on the Canadian Pacific coast could form the basis for further debate on this important matter.


Cruise Routes
Vancouver To Alaska
Route Distribution
Northbound
Cape Caution - 50%
Hecate Strait only - 25%
Grenville Channel - 23%
West Coast of the Queen Charlottes 2%
Southbound
Hecate Strait - 90%
Inside to Bella Bella - 10%
Alaska Cruise Routes
Grenville Channel
Cape Caution
Hecate Strait
Standard Route
Restricted Dumping Locations